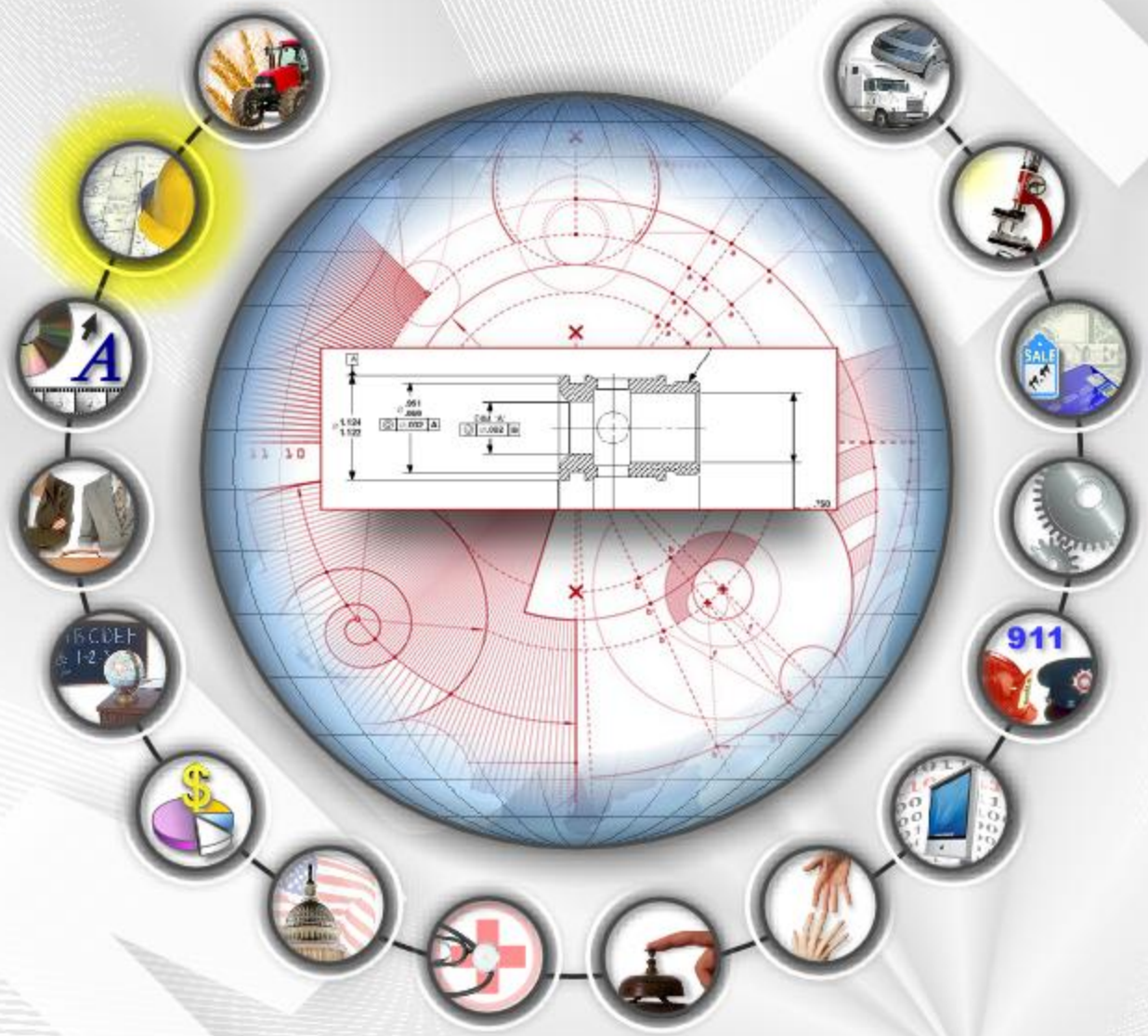
NOCTI®

Job Ready Assessment Blueprint

Technical Drafting



Test Code: 4054 / Version: 01

"Measuring What Matters"

Specific Competencies and Skills Tested in this Assessment:

Basic Drawing Skills

- Identify and demonstrate appropriate use of drafting tools, materials, and equipment
- Demonstrate knowledge of the use of CAD as a drafting tool
- Drawing standards and conventions
- Utilize appropriate drawing layout and scale
- Complete annotation on drawings
- Complete a title block
- Demonstrate sketching skills and techniques

Geometric Construction

- Identify geometric terms and constructions
- Produce basic geometric constructions
- Construct lines at any given angle
- Construct irregular curved lines
- Construct geometric shapes and plane figures
- Draw lines
- Draw curved elements

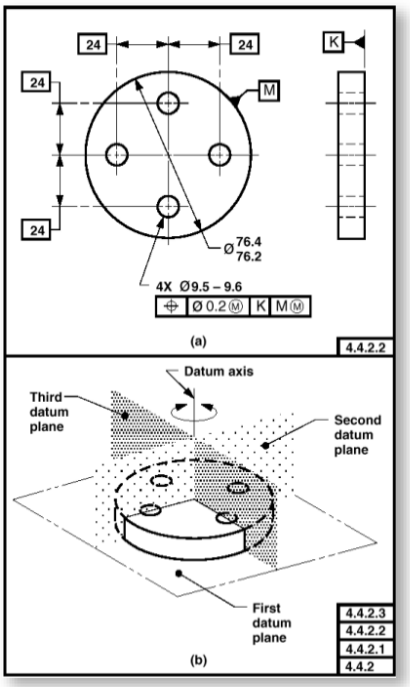
Applied Mathematics

- Basic mathematic operations
- Apply methods of measurement
- Calculate distance, area, and volume
- Calculate fractions and decimals
- Demonstrate conversion skills
- Calculate taper/slope
- Demonstrate knowledge of algebraic equations
- Demonstrate knowledge of geometry
- Demonstrate knowledge of trigonometry

Specific Competencies and Skills continued:

Dimensioning Skills

- Dimension basic features
- Apply local and general notes
- Interpret abbreviations and symbols
- Demonstrate metric dimensioning
- Demonstrate dual dimensioning
- Demonstrate tabular/charted dimensioning
- Demonstrate baseline dimensioning
- Demonstrate tolerancing practices
- Identify finished surfaces
- Demonstrate geometric dimension and tolerancing (GD&T)



Multiview Drawing

- Produce basic orthographic views
- Produce auxiliary views
- Produce section views
- Produce intersections and developments
- Produce schematic drawings
- Produce pictorial drawings
- Produce detail working drawings
- Produce assembly drawings
- Demonstrate drawing revisions
- Produce modified part drawings

Threads and Fasteners

- Identify and apply fastener terminology and symbols
- Identify and apply screw thread terminology and symbols
- Produce threaded fastener drawings
- Produce common fasteners and applications

Manufacturing Processes

- Demonstrate knowledge of machining operations
- Demonstrate knowledge of welding
- Demonstrate knowledge of various manufacturing processes
- Demonstrate knowledge of various materials

Specific Competencies and Skills continued:

- Identify standard shop tools and equipment
- Demonstrate knowledge of mechanical components

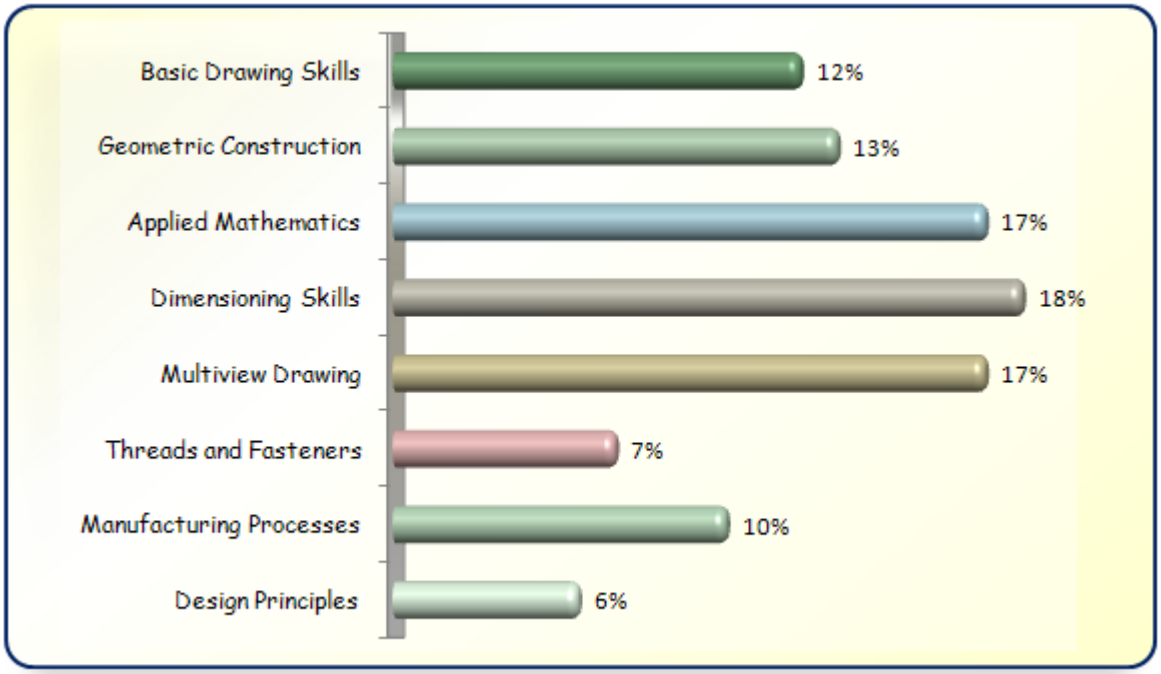
Design Principles

- Explain design guidelines (form, function, repetition, etc.)
- Identify steps of the design process/cycle
- Research and design a project
- Use reference materials

Written Assessment:

Administration Time: 3 hours
Number of Questions: 201

Areas Covered:



Sample Questions:

Which of the following is a coordinate system?

A. Baseline
B. Cartesian
C. Trigonometric
D. Datum

A smooth curve created through a set of points is called a

A. straight line
B. perpendicular bisector
C. spline
D. polygon

Use _____ as metric units of measurements for dimensioning a working drawing.

A. centimeters
B. millimeters
C. meters
D. kilometers

Which type of screw thread is the most common in the United States?

A. Whitworth
B. Unified
C. Sharp
D. Worm

A part that is formed by pressing thin material down into a die block is called a

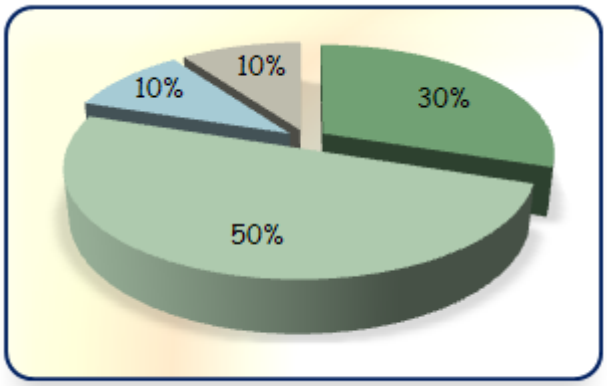
A. stamping
B. forging
C. machine part
D. weldment

Performance Assessment:

Administration Time: 3 hours and 15 minutes
Number of Jobs: 4

Areas Covered:

30% **Visualization**
Sketching: isometric sketches – missing top view, missing right side view, and timeliness of job.



50% **Orthographic Drawing**
Dimensioning, scale, line type, cutting plane line, orientation, and location, appropriate areas hatched, correct placement of views, feature presentation, correct use of line types, geometric dimensioning, drawing information, and timeliness of job.

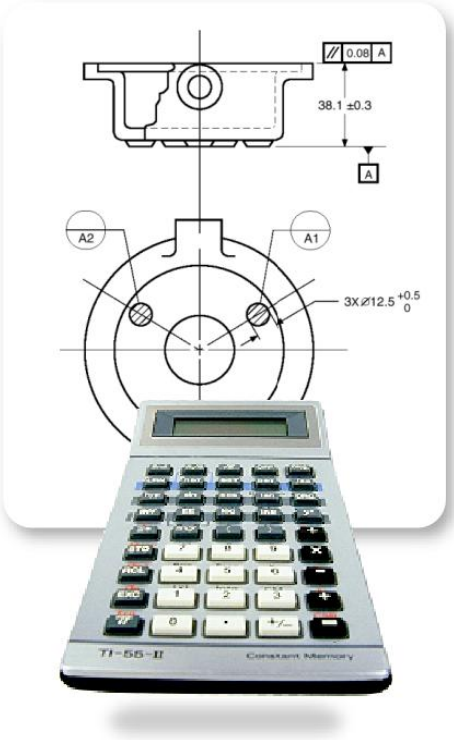
10% **Development**
Accurately developed (unfolded) pattern and timeliness of job.

10% **Assembly**
Bill of material and timeliness of job.

Sample Job: Assembly

Maximum Time: 15 minutes

Participant Activity: The participant will examine the pictorial drawing and develop a bill of material with all appropriate information from the supplied assembly drawing.



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